Fisheries and Oceans Canada | Pêches et Océans Canada
Science | Sciences

CSAS | SCCS
Canadian Science Advisory Secretariat | Secrétariat canadien de consultation scientifique

Proceedings Series 2003/038 | Série des comptes rendus 2003/038

Proceedings of the Maritimes Regional Advisory Process Bay of Fundy Scallop and Scallop Fishing Area 29

Réunion du Processus consultatif régional des provinces Maritimes Pétoncle de la Baie de Fundy et zone de pêche à la pétoncle #29

22 - 23 January 2003
Oakwood House
Dartmouth, Nova Scotia

du 22 au 23 janvier 2003
Maison Oakwood
Dartmouth (Nouvelle-Écosse)

René Lavoie (Chair)

Bedford Institute of Oceanography
1 Challenger Drive, P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

René Lavoie (président)

Institut océanographique de Bedford
1, rue Challenger, C.P. 10006
Dartmouth (Nouvelle-Écosse)
B2Y 4A2

April 2003 / Avril 2003

FOREWORD

The purpose of these proceedings is to archive the activities and discussions of the meeting, including research recommendations, uncertainties, and to provide a place to formally archive official minority opinions. As such, interpretations and opinions presented in this report may be factually incorrect or mis-leading, but are included to record as faithfully as possible what transpired at the meeting. No statements are to be taken as reflecting the consensus of the meeting unless they are clearly identified as such. Moreover, additional information and further review may result in a change of decision where tentative agreement had been reached.

AVANT-PROPOS

Le présent compte rendu fait état des activités et des discussions qui ont eu lieu à la réunion, notamment en ce qui concerne les recommandations de recherche et les incertitudes; il sert aussi à consigner en bonne et due forme les opinions minoritaires officielles. Les interprétations et opinions qui y sont présentées peuvent être incorrectes sur le plan des faits ou trompeuses, mais elles sont intégrées au document pour que celui-ci reflète le plus fidèlement possible ce qui s'est dit à la réunion. Aucune déclaration ne doit être considérée comme une expression du consensus des participants, sauf s'il est clairement indiqué qu'elle l'est effectivement. En outre, des renseignements supplémentaires et un plus ample examen peuvent avoir pour effet de modifier une décision qui avait fait l'objet d'un accord préliminaire.

104-02032/

Proceedings of the Maritimes Regional Advisory Process Bay of Fundy Scallop and Scallop Fishing Area 29

22 - 23 January 2003
Oakwood House
Dartmouth, Nova Scotia

René Lavoie (Chair)

Bedford Institute of Oceanography
1 Challenger Drive, P.O. Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Réunion du Processus consultatif régional des provinces Maritimes Pétoncle de la Baie de Fundy et zone de pêche à la pétoncle #29

du 22 au 23 janvier 2003
Maison Oakwood
Dartmouth (Nouvelle-Écosse)

René Lavoie (président)

Institut océanographique de Bedford
1, rue Challenger, C.P. 10006
Dartmouth (Nouvelle-Écosse)
B2Y 4A2

April 2003 / Avril 2003

© Her Majesty the Queen in Right of Canada, 2003
© Sa majesté la Reine, Chef du Canada, 2003

ISSN 1701-1280

Published and available free from:
Une publication gratuite de:

Fisheries and Oceans Canada / Pêches et Océans Canada
Canadian Science Advisory Secretariat / Secrétariat canadien de consultation scientifique
200, rue Kent Street
Ottawa, Ontario
K1A 0E6

http://www.dfo-mpo.gc.ca/csas/

CSAS@DFO-MPO.GC.CA

Printed on recycled paper.
Imprimé sur papier recyclé.

Correct citation for this publication:
On doit citer cette publication comme suit:

Lavoie, R. (Chair). 2003. Proceedings of the Maritimes Regional Advisory Process Bay of Fundy Scallop and Scallop Fishing Area 29; 22 - 23 January 2003. DFO Can. Sci. Advis. Sec. Proceed. Ser. 2003/038.

Table of Contents

Abstract / Résumé iv

Introduction 1

Summary / Sommaire 2

Comments from Scientific Referees 3

Appendix 1. Letters of Invitation and Postponement 11

Appendix 2. List of Invitees 13

Appendix 3. List of Participants 14

Appendix 4. Agenda 15

Appendix 5. Meeting Remit 16

Appendix 6. Documents Tabled 18

Abstract

These proceedings record discussions that were held during the Regional Advisory Process (RAP) meetings for Bay of Fundy Scallop and Scallop Fishing Area 29 stocks in the Maritimes Region on January 22-23, 2003. The scientific peer review of Bay of Fundy (SPA, 1, 3, 5, 6, and SFA 29) stock assessments were conducted. The discussions from this meeting are presented in this document.

Résumé

Le présent compte rendu relate les discussions tenues pendant les réunions du Processus consultatif régional (PCR) portant sur les stocks de pétoncles de la Baie de Fundy et de la zone de pêche à la pétoncle #29, dans la Région des Maritimes, les 22 et 23 janvier 2003. Lors de ces réunions, on a procédé à un examen scientifique par les pairs des évaluations des stock de pétoncles de la Baie de Fundy (ZPP 1, 3, 5, 6) et de la zone de pêche à la pétoncle #29; les discussions auxquelles il a donné lieu sont présentées ici.

INTRODUCTION

The meetings were held at the Oakwood House, Dartmouth, 22-23 January 2003. The Invitation letters and list of Invitees are in Appendix 1 and 2. The Chairman, René Lavoie, welcomed the participants (Appendix 3), explained the procedure for the meeting, the specific role of scientific referees, industry representatives and observers, and reviewed the agenda (Appendix 4).

The Chairman explained that the objective of the meeting was to conduct a thorough peer review of the stock assessments presented by biologists-in-charge Steve Smith and Dale Roddick with input from representatives of the province of Nova Scotia and from the industry. He also clarified that the RAP was NOT the place to discuss management considerations. The Remit for this meeting is in Appendix 5.

SUMMARY: BAY OF FUNDY SCALLOP AND SCALLOP FISHING AREA 29

This document reviews the status of scallop stocks in Scallop Production Areas (SPA) 1 to 6 (Bay of Fundy and Approaches) and in a limited portion of Scallop Fishing Area (SFA) 29 off of southwest Nova Scotia for 2001/2002 with advice for 2002/2003. The biomass dynamic model and risk analysis indicates that 1200 t could be removed by the fishery from the 8–16 mile Digby Area in SPA 1 in 2002/2003. In the rest of SPA 1 the population has not increased to the same extent as in the 8–16 mile Digby Area. The recruitment on the Upper Bay line could support a modest increase from the 2002 TAC for the Mid and Upper Bay areas of SPA 1. The 2002 research vessel survey of SPA 3 indicated an increase in the biomass of commercial-size scallops from 2001, although estimates from this survey are highly variable. The 1999 year-class is below average in biomass and any increases in biomass for commercial size scallops in 2003 are expected to be mainly due to growth. Increases in biomass in SPA 3 due to growth may be minimal if natural mortality remains as high as observed in 2002. The biomass dynamic model and risk analysis indicates that 1200 t could be removed from SPA 4 in 2002/2003. Concerns about large increases in natural mortality as occurred in 1989/1990, are continuing to be addressed by a joint monitoring program conducted with industry. To date the mortality rate continues to be low. In SPA 5, research vessel survey estimates indicate that the stock is healthy with two strong year-classes expected to recruit in 2003 and 2004. Continuation of the 10 t TAC for 2002/2003 is advisable until these year classes are fully recruited to the fishery. The 2002 research vessel survey showed little sign of recruitment in SPA 6. The high incidence of clappers (empty paired shells) seen in the Duck Island Sound area in the 2000 and 2001 surveys were not observed in 2002. Catch rates are expected to continue to decline for the next few years. For the second year, a fishery was conducted in the western portion of Scallop Fishing Area 29. In 2002, the TAC was shared between the Full Bay Fleet and a limited number of inshore east of Baccaro licences. Based on a joint industry/DFO post-

season survey, a reduction in TAC was recommended for areas A and C in 2003. The TAC for 2003 for Area B can remain at the 2002 level of 200 t. Area D should remain closed for 2003. Bycatch of lobster in this area in 2002 was low but it was not clear what impacts the scallop fishery may have had on the lobster population.

SOMMAIRE: PÉTONCLE DE LA BAIE DE FUNDY ET DE LA ZONE DE PÊCHE À LA PÉTONCLE #29

Le texte qui suit présente un examen de l'état des stocks de pétoncle des aires de production de pétoncle (APP) 1 à 6 (baie de Fundy et ses approches) et d'une partie de la zone de pêche du pétoncle (ZPP) 29, au large du sud-ouest de la Nouvelle-Écosse en 2001–2002; il présente aussi l'avis formulé pour 2002–2003. Le modèle de dynamique de la biomasse et l'analyse de risque révèlent qu'on pourrait prélever 1 200 t en 2002-2003 dans le cadre de la pêche pratiquée dans la zone de 8–16 milles de Digby (APP 1). Dans le reste de l'APP 1, la population n'a pas augmenté dans la même mesure que dans cette zone de 8–16 milles de Digby. Le recrutement le long de la ligne de démarcation de la partie supérieure de la baie pourrait justifier une modeste augmentation par rapport au TAC de 2002 dans les secteurs de l'APP 1 correspondant à la partie supérieure de la baie et au milieu de la baie. Le relevé par navire scientifique effectué en 2002 dans l'APP 3 dénotait une augmentation de la biomasse des pétoncles de taille commerciale par rapport à 2001, quoique les estimations provenant de ce relevé soient très variables. La biomasse de classe d'âge de 1999 est inférieure à la moyenne et on s'attend à ce que toute augmentation de la biomasse des pétoncles de taille commerciale en 2003 soit due essentiellement à la croissance. Dans l'APP 3, les hausses de la biomasse imputables à la croissance pourraient être minimes si la mortalité naturelle reste aussi élevée que ce qu'on a observé en 2002. Le modèle de dynamique de la biomasse et l'analyse de risque révèlent qu'on pourrait également prélever 1 200 t dans l'APP 4 en 2002–2003. On poursuit le programme de surveillance mené en commun avec l'industrie pour déceler d'éventuelles hausses importantes de la mortalité, comme celle qu'on a connue en 1989–1990. Jusqu'ici, le taux de mortalité reste faible. Dans l'APP 5, il ressort des estimations du relevé par navire scientifique que le stock est en bon état et qu'il comporte deux fortes classes d'âge qui devraient être recrutées en 2003 et 2004. On recommande de maintenir le TAC de 10 t pour 2002–2003 jusqu'à ce que ces classes d'âge soient pleinement recrutées à la pêche. Le relevé par navire scientifique réalisé en 2002 ne révélait pas grand signe de recrutement dans l'APP 6. En 2002, on n'a cependant pas observé une forte incidence de « claquettes » (coquilles vides) dans la région du détroit de l'île Duck, comme cela avait été le cas au cours des relevés de 2000 et 2001. On s'attend à ce que les taux de prises continuent à diminuer au cours des quelques prochaines années. Pour la deuxième année d'affilée, une pêche a été pratiquée dans la partie ouest de la zone de pêche du pétoncle 29. En 2002, le TAC a été partagé entre la flottille de la totalité de la baie et un nombre limité de

titulaires de permis de pêche côtière à l'est de Baccaro. Selon un relevé commun de l'industrie et du MPO réalisé après la saison de pêche, une réduction du TAC était recommandée pour les zones A et C en 2003. Le TAC de 2003 dans la zone B peut être maintenu au niveau de 2002 (200 t). Quant à la zone D, elle devrait rester fermée en 2003. Les prises accessoires de homard dans cette zone en 2002 étaient basses, mais on ne savait pas exactement quels effets la pêche du pétoncle pouvait avoir sur la population de homard.

COMMENTS FROM SCIENTIFIC REFEREES

Don Clark

General: A shell height to meat weight relationship would be useful for comparing survey and commercial sample data.

SPA1:

P5. – Could be more explicit in the discussion of proportion of meats <8g. These are presumably the '98 yc, and would be expected to be in the fishery, since shell height will be sufficient for recruitment to the fishery. It is not clear that this yc is being targeted, ie has a higher PR than others, Given their shell height and abundance this level of contribution to the catch might be as expected.

P. 7. – It is not clear what the potential 'modest' increase relates to; last years initial TAC (100t), or the landings (186t). A description of how the landings reached that level is required. Given that the fishery was allowed to remain open despite the 100t TAC having been reached, should some other level of TAC be recorded (initially set at 100t then increased mid-season…). Given that most of the catch in the upper bay came from outside the survey polygons, and the survey increased considerably, should we assume that a slight increase from 186t is proposed?

Fig. 8 Are the data presented for the upper bay survey for the survey polygons only, or for all sets in the Upper Bay?

SPA3:

The model outputs appear to have very little resolution for this stock. TAC between 0 and 200t, roughly the recent average, result in only a 6% difference in the probability of population decline. This is a reflection of the limited data available, and that may be worth noting.

The conclusions/advice are essentially pragmatic: there is little for pre-recruits and the recruits on Lurcher (Fig 13) could use another year for growth. Would it help management to include this point explicitly in the forecast as backing for the suggested low quota?

The meat weights in samples taken (Table10) are quite large: where do they come from? They would be roughly 125mm if from Lurcher, which is larger than we see in the survey.

SPA 4:
Fairly clear-cut. No substantive comments.

SPA 5:
Commercial avg. meat size suggests they caught primarily large scallops, and survey indicates one (SMALL) area where large scallops are present without recruits (eastern end of survey area).

Survey catch in 2002 is disproportionate with the previous 2 years (Fig. 31); catches are much higher at all sizes. This indicates the level of inter-annual variability is high, adding weight to the suggestion not to increase TAC this year. Wait another year both to allow recruits to grow, and to ensure the overall increase in scallop catch in the survey is not just a year-effect.

SPA 6:
Where were the samples in Table 20 taken? Meat weights in August and September are low. These come from smaller scallops than the height distribution in the survey (13g ~ 100mm). If theses are from Mace's Bay, it may indicate that recruitment is better in this area, which has not been well surveyed, perhaps explaining why the fishery is focussed there. Recruitment patterns may be more like 6B. The outlook is quite pesimistic and should perhaps be tempered based on these fishery observations.

Data in Fig. 41 do not match those from Res. Doc 2002/16, particularly for 2001. These need to be resolved.
For consistency with SSR/Res doc. policies (at least as they have been applied in groundfish) the figure for area 6c survey height frequency should be included in the Res. Doc if it is included in the SSR.

SFA 29:
Survey estimates seem highly variable. The decline in A is linked to fishing pressure, despite the very low landings (p16) in 29B and 29D there has been an increase at all shell heights since 2001. Given this, do changes in catch from 2001-2002 have much information value regarding exploitation?

Fig 50: Apparent recruitment in area C: are the increases for pre-recruits and recruits from 2001 due to increased partial recruitment to the survay gear, or to inter-annual variability in survey catch?

Fig 51: The number of clappers looks quite low here compared to the numbers in Table 23, which are roughly 1/3 of the number of live scallops>80mm. Are the plotted data correct?

Table 24b) Mean weight/tow of >80mm scallpos is shown to have declined from 2001-2002. This is not consistant with fig. 51, which shows an increase in catch

for all shell heights. Are the data correct? If not, is there a change in the P-level for this area; has it perhaps increased significantly from 2001?

The forecasts given are an interesting innovation, a novel way of trying to utilize quite limited data. It might be helpful, however, to discuss these forecasts in light of the survey variability.

Given the increased catch of commercial sized scallops in area D, could we suggest where in area D they might be able to harvest commercial sized scallops without catching recruits? The NW edge of area D might be harvestable.

Lobster bycatch: Should indicate that only the impact due to bycatch was examined, other impacts have been postulated but not examined here (habitat impact).

Can the scallop survey provide information on areas to avoid to reduce lobster bycatch, or are the lobster too migratory?

Kees Zwanenburg
For the uninitiated reader this is a very complex document that requires a significant amount of outside reading to understand. As a general comment the document could be made somewhat more "reader" friendly by the inclusion of a text table that gives the major findings for each of the scallop areas discussed. This could take the form of the bullets provided in the SSR (Stock Status Report 2003) with a reference to page and figure numbers added for clarity.

Given that the framework for this assessment (i.e. the delay difference model) has been previously reviewed and accepted, most of the review comments are aimed at identifying areas of concern that should be considered in future reviews of the framework, at how the conclusions relate to the analyses, and issues of clarity.

In general the conclusions drawn from the data and analyses presented were well supported.

Specific comments are given below by section although some apply to more than one section.

Introduction

Figure 1 might be more helpful if there are some place names added to help the geographically challenged. There are a lot of references throughout the document to specific place names adjacent to scallop fishing areas; these should be added to the figure. This is also true for the reference to the "8-16 mile area" (either add this to Fig 1 or reference Figure 3 in the intro).

SPA 1

- Total landings for mid-bay vessels for 2001 do not match between the text and the text table.

- There is a reference to the Digby grounds that should be included in a figure.

- It is pointed out that there is a concentration of scallops on the upper bay line (Figure 3) Is this a new observation. Is this an area where no scallops have been observed before? This is part of a more general question on scallop distribution

  The survey data shown throughout the document concentrates on establishing the abundance and size structure of the known commercial scallop beds but only a small amount of effort is expended looking for other areas of scallop concentration. Has there been previous work on the settlement patterns of especially large year classes. Is it possible that large year-classes could also result in the establishment of new beds? If this is the case it might be advantageous for the industry to spend some money on exploratory surveys, especially following the settlement of large year-classes. Scientifically it would give some added information on the meta-population structure of this species in this area useful for refining estimates of critical biomass etc.

  There is a reference to a "stock" of scallops in the 8-16 mile area. Is this a convenience of management or has there been work done to determine that this is a stock?

- Figure 4 indicates a relatively rapid decline in numbers of scallops per set between 1988 and 1996. What is the contribution of fishing to this decline?

- Figure 5 shows that significant numbers of small scallops have only been observed in this fishing area since 2000. Is this indicative of a highly periodic recruitment dynamic or could it be the result of changes in survey methodology or protocols from previous years?

- The apparent synchronicity in the dynamics of SPA 1, 3, and 4 (Figures 4, 8, 19, and 28) could indicate a significant linkage between these populations (at least with regard to recruitment). Has this bee looked into and if so what are the implications to the estimates of critical biomass (see next point).

- In the forecast section (Page 7), the authors reference Smith and Lundy 2002c for the estimations of critical biomass. These authors indicate that the critical limit was established based on an expectation if the **stock were fished at fo.1** for both SPA and SPA 4, using average recruitment (excluding peak years). Since the general framework of this assessment has been agreed upon we should not open debate about the appropriateness or

otherwise of these calculations. When the framework is reconsidered however, it should be noted that this depends on a number of key assumptions (no the least of which is a closed population) that should be evaluated. Given that the biomass and recruitment for this resource are presently high, and there is a recommendation for an increased TAC, the limit will not likely be contentious. These conditions will change and the limit will be contested.

- Objectives and associated reference points are being developed through discussions between DFO and industry. Acceptance of a reference level biomass as a management strategy implies a positive relationship between that reference level and future recruitment success. Such a relationship has not been satisfactorily established. Industry considers that such a strategy can increase the risk of episodic die-offs, especially at high scallop densities. Implementing research and monitoring aimed at establishing the relationship between scallop biomass and recruitment both within current SPA's and within the Bay of Fundy meta-population as a whole is essential. In addition research and monitoring focussed on determining the conditions resulting in episodic die-offs is warranted. This applies to all SPA's.

SPA 3

- Of note with this area is the lack of recruits apparent in the last couple of surveys (noted in the text) coupled with high biomass. The strategy that is presented is aimed at maintaining or increasing the existing biomass. Is there evidence that this will lead to increases in recruitment? It might be informative to see a stock / recruitment plot for this and other areas to see if there is a discernible relationship. It might also be informative to examine this for the meta - population by plotting the aggregate biomass for all beds vs the resultant recruitment observed aggregated for all beds.

- The estimates of mortality in the delay difference model are based on the proportion of clappers in the population coupled with assumptions of the duration before shell separation and equilibrium between clappers and single shells. Has either of these assumptions been looked at in sufficient detail to determine the degree of variation in the former and the validity of the latter? This would seem to be a key issue both in the pragmatic decision making process and the delay difference model employed to evaluate future management actions. How does the mortality rate derived from

  clappers compare to a mortality rate derived from the age structure (assuming that there is an age structure used to calculate F0.1 and critical biomass)?

- On page 10 it is indicated that the 1999 catch was halved and tow 19 was excluded from the delay-difference model. What was the impact of this on the resultant estimates? It might be better to provide the original estimates in conjunction with the "adjusted" ones to evaluate the impact.

- Figure 23 indicates that the probabilities of getting a more extreme observation of mortality, recruitment, or biomass (Table 14) is on the order of 40 – 50% yet the text indicates (page 10) that the goodness of fit test did not identify any extreme lack of fit? Are these consistent? These would appear to be relatively high probabilities of getting a more extreme value.

SPA 4

- In the stock status section on page 12 the authors indicate that M continues to be estimated as relatively low in the model. This is an understatement since the most recent estimate is the second lowest in the time series. Is this consistent with the observed increase in numbers of clappers observed in SPA4 (see table 16 in Smith and Lundy CSAS Res. Doc 2002/18). The latter data indicate a three-fold increase in the number of clappers observed. Are these observations consistent? It would appear that an increase in clappers (given the assumptions of constant time to separation and equilibrium with single shells) should indicate an increase in mortality?

- Further on in the stock status section the authors state assumed constant growth for this SPA and that this is resulting in the observed difference between the survey and predicted values of biomass. For future assessments of this resource would it be feasible to actually model growth? There appears to be a lot of information on growth available so this might be feasible.

- In the forecast section reference is made to the critical biomass estimated from the yield per recruit calculations. It may be beneficial to indicate the potential shortcomings of such an estimate (see above) This may make it more palatable to change the estimate (if required) in future when further analyses are carried out or when the assumptions of the ypr analyses are evaluated.

SPA29

- The authors comment (page 15) that the industry was supplied with positions and catch information from the 2001 survey after the 2002 season had begun. What is the relevance of this comment?

- The distribution of size classes in SFA 29 appears to be different than was observed in the other areas in that there appears to be some separation between area of pre-recruits and recruiting or recruited scallops (Figure 42 – 44). This could be beneficial in devising management strategies to avoid impacts on pre-recruits. It may also be of interest to examine the biophysical characteristics of this area to see if there are attributes that make it more "attractive" to smaller scallops than larger ones. It appears that there is also a greater concentration of large (80mm+) clappers immediately adjacent to the area of high pre-recruit concentrations (Figure 47). Is this area less habitable for larger scallops?

- The authors comment on page 16 that distribution and abundance of 2003 recruits was 2-3 times larger than the estimate of the 2002 recruits yet table 23 only shows the abundance estimates. It may be very informative to actually develop some distribution indicators so that the spatial distribution of scallops can be objectively compared between years within PA's or between years within the meta-population. Some of these measures are being used the groundfish assessments (Zwanenburg et al 200 something).

- The discussion on liners and gear performance on page 17 was not clear. For the sake of clarity is should be re-worded; however the adjustments made, make no difference to the overall conclusions drawn.

- The approach adopted in the forecast section shows a great deal of ingenuity but may have some aspects that need further clarification. The authors indicate that the 440t reportedly removed from area C in SFA 29 resulted in a 7kg per tow reduction in mean meat weight per tow. This observation is then used to estimate that the TAC should be no higher than 103t to ensure no detectable reduction in the mean meat weight per tow (very clever); however this would depend on the relative density of pre-recruits and recruits present in the area. No recruits would result in no change (assuming that there were enough fully recruited scallops to maintain biomass. A higher concentration of pre-recruits to recruits would likely result in a decline in catch weight (as was observed here) and a high proportion of pre-recruits to recruits would results in a proportionally greater reduction in mean meat weight. Can this be taken into account in the current assessment?

- The authors indicate that there were observers deployed on scallop vessels to estimate lobster by-catches in the SFA 29 scallop fishery. The salient results are presented on Figure 54, which indicates that there are some areas where lobster catches are relatively higher than in other parts of the SFA. It is interesting to note that the closed area put in place to minimize this impact does not encompass the area of high lobster by-catch but only a small portion of it. What was the rationale for choosing this particular subset of the area? A small westward extension of the western boundary of the closed area would encompass the entire area of high lobster by-catch. The conclusion regarding the lack of impact of this fishery on lobster populations (para 2 conclusions page 20) is not supported by the present analysis. It would strengthen the conclusion if the supporting analysis were presented.

  It is interesting that only lobster by-catches were collected and analyzed given the increased interest in impacts of fisheries on overall biodiversity. Are there data available for by-catch profiles from these fisheries?

  It was pointed out that this study had a relatively narrow focus in that it did not address the wider question of impacts, only the rate of lobster by-catch. In

order to evaluate the broader impact of the scallop fishery on lobster populations it was suggested that further studies be carried out that 1) examine the impact of scallop drags on lobster habitat, and 2) examine the impact of scallop drags on juvenile lobsters.

Appendix 1. Letter of Invitation

Invertebrate Fisheries Division
Maritimes Region, Science Branch
Bedford Institute of Oceanography
P.O. Box 1006, Dartmouth
Nova Scotia, B2Y 4A2
(TEL: 902 426-7444)
(FAX: 902 426-1862)

13 November 2002

Distribution

Subject: Assessment of SPA 1, 3, 5, 6 and SFA 29 Scallop Stocks. Update on SPA 1 (8–16 miles, Digby) and SPA 4.

The assessment of the inshore Bay of scallop stocks will be reviewed in the Conference Room Oakwood House Dartmouth, Nova Scotia (see attached map), during 11–12 December, 2002, commencing at 9:00 am. The meeting's terms of reference are attached.

The purpose of the review is to consider the assessments' data inputs, to examine the scientific approaches of the stock assessments, to identify any weaknesses in data and /or methodology, to help improve the clarity of the assessments, and to make recommendations for further research. It will include a detailed examination of the stock assessments and writing of Stock Status Reports.

Copies of the assessments and the draft stock status reports will be sent to participants one week before the meeting. At the meeting, DFO science staff will provide a brief overview of the assessments, which will include the main conclusions, the supporting evidence, any new methods, and major limitations. The presentation will be followed by discussion among the participants. The finalised stock status report will be prepared at the meeting. The minutes of this meeting will be published as a proceedings.

We greatly appreciate your contribution to this valuable exercise.

Division des invertébrés
Région des Maritimes, Direction des sciences
Institut océanographique de Bedford
C.P. 1006, Dartmouth
(Nouvelle-Écosse) B2Y 4A2
(TÉL. : 902 426-7444)
(FAX : 902 426-1862)

Le 13 Novembre 2002

Liste de diffusion

Objet : Évaluation des stocks de pétoncle des ZPP 1, 3, 4, 6 et 29

L'évaluation des stocks de pétoncle de la zone côtière de la baie de Fundy (ZPP 1, 3, 4, 6 et 29) fera l'objet d'un examen dans la salle de conférences du MicMac Amateur Aquatic Club, 192, chemin Prince Albert, Dartmouth, N-É., les 13 et 15 février 2002 à partir de 9 h. Le programme de la réunion est joint à la présente.

La réunion aura pour but d'examiner les données d'entrée des évaluation et les approches scientifiques aux évaluations de stock, de mettre en évidence toute faiblesse dans les données et/ou la méthodologie, d'améliorer la clarté des évaluations et de formuler des recommandations de recherches futures. Elle comprendra un examen détaillé des évaluations de stock et la rédaction des Rapports sur l'état des stocks.

Des copies des évaluations et des ébauches de Rapports sur l'état des stocks seront envoyées aux participants une semaine à l'avance. À la réunion, les scientifiques du MPO présenteront un bref aperçu des évaluations, portant sur les principales conclusions, les preuves à l'appui de ces dernières, toute nouvelle méthode et les principales limites. La présentation sera suivie d'une discussion entre les participants. La version définitive du Rapport sur l'état des stocks sera établie à la réunion et le procès-verbal de cette dernière sera publié sous forme de compte rendu.

Nous vous sommes très reconnaissants de votre contribution à cette importante activité.

Original signed by / Signataire de l'original

Rene Lavoie
Meeting chair /Président de la réunion

Invertebrate Fisheries Division
Maritimes Region, Science Branch
Bedford Institute of Oceanography
P.O. Box 1006, Dartmouth
Nova Scotia, B2Y 4A2
(TEL: 902 426-7444)
(FAX: 902 426-1862)

Division des invertébrés
Région des Maritimes, Direction des sciences
Institut océanographique de Bedford
C.P. 1006, Dartmouth
(Nouvelle-Écosse) B2Y 4A2
(TÉL. : 902-426-7444)
(FAX : 902-426-1862)

2 December 2002

Le 2 décembre 2002

Distribution

Liste de diffusion

Subject: Assessment of SPA 1, 3, 5, 6 and SFA 29 Scallop Stocks. Update on SPA 1 (8–16 miles, Digby) and SPA 4.

Recently you were sent an invitation to attend a Regional Advisory Process Peer Review meeting on 11-12 December 2002 to review assessments of SPA 1, 3, 5, 6 and SFA 29 scallop stocks, and updates on SPA 1 (8–16 miles, Digby) and SPA 4. Due to scheduling conflicts, this meeting has been cancelled and rescheduled for 22-23 January 2003. The meeting location and agenda will remain the same.

Please make a note of this date change.

Objet : Évaluation des stocks de pétoncle des APP 1, 3, 5 et 6 ainsi que de la ZPP 29. Mise à jour de l'état des stocks des APP 1 (8-16 milles, Digby) et 4.

Nous vous avons envoyé récemment une invitation à assister à la réunion du Processus consultatif régional qui devait avoir lieu les 11 et 12 décembre 2002 et avait pour but d'examiner les évaluations des stocks de pétoncle des APP 1, 3, 5, 6 et de la ZPP 29, et de mettre à jour l'état des stocks des APP 1 (8-16 milles, Digby) et 4. En raison d'autres engagements, nous avons dû annuler cette réunion et la reporter aux 22 et 23 janvier 2003. Le lieu et l'ordre du jour de la réunion restent inchangés.

Veuillez prendre note de ce changement.

Original signed by / Signataire de l'original

René Lavoie
Meeting chair /Président de la réunion

Appendix 2. List of Invitees

Science / Sciences	*Government - Others / Gouvernement - Autres*	*Industry / Industrie*
Mark Lundy	Maureen Butler, Maritimes	Keith Amero
Dale Roddick	Ron Cronk, NB/N.-B.	Kevin Amireault
Ginnette Robert	Jim Jamieson, Maritimes	Michael Chute
Stephen Smith	Bruce Osborne, NS/N.-É.	Brian Giroux
René Lavoie	Ian Marshall, DFO/MPO, Yarmouth	Greg Hamilton
Don Clark	Roddie MacDonald, DFO/MPO St. Andrews	Kevin Hurley
Kees Zwanenburg		Vance Hazelton
Doug Pezzack		Marc Johnston
Cheryl Frail		Thomas O'Neil
		Ashton Spinney
		Klaus Sonnenberg
		R.G. (Dick) Stewart
		Greg Thompson
		Glen Wadman

Appendix 3. List of Participants

Participant	Affiliation and Address	Telephone	Fax	E-mail
Amero, Keith	Fisherman, Fall Bay	(902) 245-2083	245-1844	
Black, Jerry	DFO, BIO, Dartmouth, NS	(902) 426-2950		Blackj@mar.dfo-mpo.gc.ca
Butler, Mark	Ecology Action Centre, Halifax, NS	(902) 429-2202	422-6410	Ar427@chebucto.ns.ca
Butler, Maureen	DFO, Marine House, Dartmouth, NS	(902) 426-9856	426-9683	Butlerm@mar.dfo-mpo.gc.ca
Clark, Donald	St. Andrews, NB	(902) 529-5908		Clarkd@mar.dfo-mpo.gc.ca
Cooper, Andrew	DFO - Ottawa	(613) 991-6951		Coopera@dfo-mpo.gc.ca
D'Entremont, Geoffrey	Yarmouth, NS	(902) 742-9650	742-2411	
Frail, Cheryl	DFO, BIO, Dartmouth, NS	(902) 426-5448	426-1862	Frailc@mar.dfo-mpo.gc.ca
Fry, Joy	Full Bay Scallop Assoc.	(902) 742-9101	742-1287	Aherring@klis.com
Giroux, Brian	Yarmouth, NS	(902) 742-6732		Sfmobile@fox.nstc.ca
Hazelton, Vance	Digby, NS	(902) 245-5712	245-2721	Vah@ns.sympatico.ca
Jamieson, Jim	DFO, Dartmouth, NS	(902) 426-8981	426-9683	
Johnston, Marc	NBDAFA - St. George, NB	(506) 755-4000	755-4001	Marc.johnston@gnb.ca
Koeller, Peter	DFO, BIO, Dartmouth, NS	(902) 426-5379	426-1862	Koellerp@mar.dfo-mpo.gc.ca
Lavoie, Rene	DFO, BIO, Dartmouth, NS	(902) 426-2147	426-1843	Lavoier@mar.dfo-mpo.gc.ca
Lundy, Mark	DFO, BIO, Dartmouth, NS	(902) 426-3733	426-1862	Lundym@mar.dfo-mpo.gc.ca
Marshall, Ian	DFO, Yarmouth, NS	(902) 742-0859	742-6893	
Mazerall, Melissa	DFO, BIO, Dartmouth, NS	(902) 426-2273	426-1862	Mazerallmj@mar.dfo-mpo.gc.ca
Osborne, Bruce	NSDAF, Halifax, NS	(902) 424-0352	424-1766	Osbornbd@gov.ns.ca
Pezzack, Doug	DFO, BIO, Dartmouth, NS	(902) 426-2099	426-1802	Pezzackd@mar.dfo-mpo.gc.ca
Ringbourne, Sherman	Grand Manan, NB	(506) 662-8931	662-3883	
Risser, Winfred	Area 29 - Lunenburg Comm.	(902) 766-4030		Jonahcrab@hotmail.com
Robert, Ginette	DFO, BIO, Dartmouth, NS	(902) 426-2616	426-1862	Robertg@mar.dfo-mpo.gc.ca
Roddick, Dale	DFO, BIO, Dartmouth, NS	(902) 426-6643	426-1862	Roddickd@mar.dfo-mpo.gc.ca
Spinney, Ashton	LFA 34	(902) 643-2490	643-2490	
Smith, Stephen	DFO, BIO, Dartmouth, NS	(902) 426-3317	426-1862	Smithsj@mar.dfo-mpo.gc.ca
Stewart, Dick	Full Bay Scallop Assoc.	(902) 742-9101	742-1287	Aherring@klis.com
Thompson, Greg	Fundy North, NB	(506) 659-2885	659-3113	Greg_fn@hotmail.com
Zwanenburg, Kees	DFO, BIO, Dartmouth, NS	(902) 426-3310	426-1506	

Appendix 4. Meeting Schedule

Assessment of SPA 1, 3, 5, 6 and SFA 29 Scallop Stocks. Update on SPA 1 (8–16 miles, Digby) and SPA 4.
22 - 23 January 2003
Oakwood House
Dartmouth, NS

Wednesday, 22 January

09:00: Introduction

09:10-10:00: SPA 1

10:00-10:30: Break

10:30-11:30: SPA 3

11:30-12:00: SPA 4

12:00-13:30: Lunch

13:30-14:00: SPA 4

14:00-14:30: SPA 5

14:30-15:00: SPA 6

15:00-15:30: Break

15:30-16:00: SPA 6

16:00-17:00: SFA 29

Thursday, 23 January

09:00: Recap

09:15 to 10:00: SSR

10:00-10:30: Break

10:30-12:00: SSR Draft

12:00: End

Pétoncle des ZPP 1, 3,4, 6 et de la zone de pêches à la pétoncle # 29
Les 22-23 janvier 2003
Maison Oakwood
Dartmouth, N-É.

Mercredi, le 22 janvier

de 9 h: Introduction

de 9 h 10 à 10 h: ZPP 1

de 10 h à 10 h 30: Pause

de 10 h 30 à 11 h 30: ZPP 3

de 11 h 30 à 12 h: ZPP 4

de 12 h à 13 h 30: Déjeuner

de 13 h 30 à 14 h: ZPP 4

de 14 h à 14 h 30: ZPP 5

de 14 h 30 à 15 h: ZPP 6

de 15 h à 15 h 30: Pause

de 15 h 30 à 16 h: ZPP 6

de 16 h à 17 h: ZPP 29

Jeudi, le 23 janvier

de 9 h: Résumé

de 9 h 15 à 10 h: RES

de 10 h à 10 h 30: Pause

de 10 h 30 à 12 h: ébauche du RES

de 12 h: Fin

Appendix 5. Meeting Remit

Meeting Remit
Meeting of the Maritimes Regional Advisory Process
Assessment of SPA 1, 3, 5, 6 and SFA 29 Scallop Stocks. Update on SPA 1 (8–16 miles, Digby) and SPA 4.
22 - 23 January 2003
Oakwood House
Dartmouth, NS

Demande de renvoi à la réunion du Processus consultatif régional des provinces Maritimes
Pétoncle des ZPP 1, 3,4, 6 et de la zone de pêches à la pétoncle # 29
Les 22 - 23 janvier 2003
Maison Oakwood
Dartmouth, N-É.

Area 1 Scallop

- Assess the status of Area 1 scallop as of 4 November 2002. The assessment should include:
  - An analysis of available commercial and survey information since 1981
  - Application of the assessment model used CSAS research document 2002/015
- Review advice provided for the 8–16 mile Digby area for Full Bay fleet and provide advice for rest of area for the 2002/2003 fishery.
- Produce a section of the Inshore Scallop Stock Status Report and supporting Research Document documenting the results of the assessment.

Pétoncle de la zone 1

- Évaluer l'état du stock de pétoncle de la zone 1 jusqu'au 17 decembre 2001. Cette évaluation devrait comprendre :
  - Une analyse des données des relevés et de la pêche commerciale depuis 1981
  - L'application du modèle d'évaluation examiné du 10 au 12 octobre 2001.
- Revue des conseil pour la zone 8-16 milles de l'aire de Digby pour la flotte Pleine Baie et formuler des conseils pour le reste de l'aire pour la pêche de 2002 / 2003.
- Produire une partie du Rapport sur l'état du stock de pétoncle côtier et le document de recherche connexe documentant les résultats de l'évaluation.

Area 3 Scallop

- Assess the status of Area 3 scallop as of 4 November 2002. The assessment should include:
  - An analysis of available commercial and survey information.
  - Application of the assessment model used in CSAS research document 2002/017
- Provide updated advice for the 2003 fishery.
- Produce a section of the Inshore Scallop Stock Status Report and supporting Research Document documenting the results of the assessment.

Pétoncle de la zone 3

- Évaluer l'état du stock de pétoncle de la zone 3 jusqu'au 4 novembre 2002. Cette évaluation devrait comprendre :
  - Une analyse des données des relevés et de la pêche commerciale.
  - L'application du modèle d'évaluation utilisé dans le document SCCS 2002/17.
- Formuler des conseils à jour pour la pêche de 2003.
- Produire une partie du Rapport sur l'état du stock de pétoncle de la côtier et le document de recherche connexe documentant les résultats de l'évaluation.

Area 4 Scallop

- Assess the status of Area 4 scallop as of 30 September 2002. The assessment should include:
  - An analysis of available commercial and

Pétoncle de la zone 4

- Évaluer l'état du stock de pétoncle de la zone 4 jusqu'au 30 septembre 2002. Cette évaluation devrait comprendre :
  - Une analyse des données des relevés et

survey information
- Application of the assessment model used CSAS research document 2002/018
- Review advice provided for the 2002/2003 fishery.
- Produce a section of the Inshore Scallop Stock Status Report and supporting Research Document documenting the results of the assessment.

Area 5 Scallop

- Assess the status of Area 5 scallop as of 30 September 2002. The assessment should include:
- An analysis of available commercial and survey information
- Provide advice for the 2002/2003 fishery.
- Produce a section of the Inshore Scallop Stock Status Report and supporting Research Document documenting the results of the assessment.

Area 6 Scallop

- Assess the status of Area 6 scallop as of 4 November 2002. The assessment should include:
- An analysis of available commercial and survey information since 1997.
- Provide advice for the 2003 fishery.
- Produce a section of the Inshore Scallop Stock Status Report and supporting Research Document documenting the results of the assessment.

Scallop Fishing Area 29

- Assess the status of Area 29 scallop as of 31 August 2002. The assessment should include:
- An analysis of available commercial and survey information for 2001 and 2002
- Provide advice for the 2003 fishery.
- Produce a section of the Inshore Scallop Stock Status Report and supporting Research Document documenting the results of the assessment.

de la pêche commerciale.
- L'application du modèle d'évaluation utilisé dans le document SCCS 2002/17.
- Revoir les conseils pour la pêche de 2002/2003.
- Produire une partie du Rapport sur l'état du stock de pétoncle côtier et le document de recherche connexe documentant les résultats de l'évaluation.

Pétoncle de la zone 5

- Évaluer l'état du stock de pétoncle de la zone 5 jusqu'au 30 septembre 2002. Cette évaluation devrait comprendre :
- Une analyse des données des relevés et de la pêche commerciale.
- Formuler des conseils sur la pêche pour 2002/2003.
- Produire une partie du Rapport sur l'état du stock de pétoncle côtier et le document de recherche connexe documentant les résultats de l'évaluation.

Pétoncle de la zone 6

- Évaluer l'état du stock de pétoncle de la zone 6 jusqu'au 4 novembre 2002. Cette évaluation devrait comprendre :
- Une analyse des données des relevés et de la pêche commerciale depuis 1997.
- Formuler des conseils pour la pêche de 2003.
- Produire une partie du Rapport sur l'état du stock de pétoncle côtier et le document de recherche connexe documentant les résultats de l'évaluation.

Pétoncle de la zone 29

- Évaluer l'état du stock de la zone 29 jusqu'au 31 Août 2002. Cette évaluation devrait comprendre :
- Une analyse des données des relevés et de la pêche commerciale pour 2001 et 2002.
- Formuler des conseils pour la pêche de 2003.
- Produire une partie du Rapport sur l'état du stock de pétoncle côtier et le document de recherche connexe documentant les résultats de l'évaluation.

Appendix 6. Documents Tabled

Smith, S., M. Lundy, D. Roddick, D. Pezzack, C. Frail, 2002. Scallop Production Areas in the Bay of Fundy and Scallop Fishing Area 29 in 2002: Stock status and forecast. RAP Working Paper 2002/026.

Referees : Don Clark, Kees Zwanenburg.